Int. j. adv. multidisc. res. stud. 2026; 6(6):240-242

Received: 14-09-2026
Accepted: 24-10-2026

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Instructional Adaptation and Resource Constraints in Supporting Learners with Deafblindness: Teachers' Reports from Dar es Salaam, Tanzania

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DOI: https://doi.org/10.62225/2583049X.2026.6.6.7125
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Abstract
This study examines teachers' reports on instructional adaptation and the availability of teaching resources in two primary schools serving learners with deafblindness in Dar es Salaam, Tanzania. Using a convergent mixed-methods design within a cross-sectional framework, the study engaged 32 specialist teachers alongside qualitative perspectives from learners, parents, headteachers, and unit leaders. Findings show that 23 of the 32 teachers (71.9%) reported inadequate availability of teaching and learning materials. Teachers also acknowledged the necessity of modifying instructional approaches to meet learners' individualized communication and sensory needs. These results highlight that instructional adaptation must be understood within the material and institutional contexts of schools. While the study does not establish causal relationships between resources and learner outcomes, it underscores the importance of resource availability, appropriateness, functionality, and utilisation, alongside teacher preparation and individualized pedagogy.

Keywords: Deafblindness, Instructional Adaptation, Assistive Technology, Educational Resources, Inclusive Education, Tanzania

Introduction

Education for learners with deafblindness requires careful and systematic attention to communication, access to information, individualized instruction, participation, and assessment. Teaching materials designed primarily for visual or auditory access may not be accessible to learners with combined hearing and vision impairments without appropriate adaptation.

Professional guidance emphasises individualized communication and tailored learning arrangements, highlighting the importance of considering the learner's sensory profile and methods of accessing information (McLetchie & Riggio, 1997; Riggio & McLetchie, 2008) [3, 4]. Hersh (2013) [2] underscores the centrality of communication for promoting independence and participation among individuals who are deafblind. These perspectives support examining instructional resources as part of the broader educational environment rather than as an isolated list of items.

Instructional adaptation is not solely the responsibility of individual teachers. Teachers may recognize the need to adapt instruction but often face constraints when materials, assistive technologies, specialist support, or opportunities for professional learning are insufficient or unavailable. Resource availability should be distinguished from resource appropriateness and utilisation: a device may be present but unsuitable for a specific learner, non-functional, or unfamiliar to teachers.

This study therefore examines two connected issues in selected primary schools in Dar es Salaam: teachers' reports about the availability of teaching and learning materials, and the implications of these findings for understanding instructional adaptation. Reported practices and perceptions are treated as the principal evidence, and the study does not claim to measure the causal effect of resources on learner achievement.

Methods

The study was conducted in two purposively selected primary schools in Dar es Salaam, Tanzania, using a convergent mixed-methods design within a cross-sectional framework. The sample comprised 44 participants: 32 specialist teachers, four learners with deafblindness, four parents or guardians, two headteachers, and two heads of specialised units.

The quantitative strand involved a teacher questionnaire administered to the 32 respondents. The questionnaire used three

response categories: Agree, Not Sure, and Disagree, with frequencies and percentages employed to describe teacher responses. The analysis is descriptive and should not be interpreted as nationally representative.

The qualitative strand included interviews and non-participant classroom observations to provide contextual evidence. In the published manuscript, any detailed claim about family involvement, environmental accessibility, communication methods, or classroom events must be supported by verifiable interview transcripts or observation records.

Ethical procedures, including approval, consent/assent, and data protection, were followed in accordance with institutional requirements. These details must be inserted from verified research documentation before submission.

Results

The findings reveal a widespread perception among teachers of inadequate instructional resources in the studied schools. Of the 32 teachers surveyed, 23 (71.9%) reported that teaching and learning materials were not available in their schools. This indicates that the majority of participating teachers perceived a significant shortage of instructional resources. However, the data do not specify which particular items were absent, whether resource availability differed between the two schools, or whether all categories of resources were unavailable.

Teachers also acknowledged the need to adapt instructional approaches to meet the individualized communication and sensory needs of learners with deafblindness. These two findings should be interpreted together: the recognition of adaptation requirements coexisted with reported limitations in resource availability.

The available figures do not establish the extent to which specific resource constraints prevented particular instructional practices. The qualitative component of the study was designed to provide contextual perspectives from learners, parents, headteachers, and unit leaders. In the published manuscript, any detailed claim about family involvement, environmental accessibility, communication methods, or classroom events must be supported by verifiable interview transcripts or observation records.

Discussion

The findings highlight a critical tension between teachers' recognition of the need for instructional adaptation and their reported lack of adequate resources. The central result that 23 of 32 teachers (71.9%) reported that teaching and learning materials were not available, is significant because educational adaptation for learners with deafblindness often depends on access to materials and communication supports that are suitable for the individual learner. Nevertheless, this result reflects teacher-reported perceptions of availability rather than an independent audit of school resources.

It is important to distinguish resource availability, appropriateness, and utilisation. Counting items alone does not establish that resources are functional, accessible, or suitable for the communication profile and educational goals of a particular learner. Conversely, the absence of specialised devices does not necessarily mean that instruction is impossible; teachers may employ locally available tactile or concrete materials, provided these are safe, accessible, and pedagogically appropriate.

The findings also support a systems-oriented view of instructional adaptation. Teacher preparation, resource provision, institutional support, and instructional decisions are interconnected dimensions of educational practice. Professional guidance for deafblind education emphasises specialised planning and individualized support (McLetchie & Riggio, 1997; Riggio & McLetchie, 2008) [3, 4]. A resource can only support learning if it is selected in relation to the learner and integrated into instruction. Teacher professional development should therefore address both the rationale for adaptation and the practical use of available materials.

Implications for Practice

These findings suggest that schools and education authorities should prioritize resource planning that addresses availability, appropriateness, functionality, maintenance, and teacher capacity to use materials effectively. Collaborative resource audits involving teachers, learners, families, and specialists could ensure that materials are both accessible and relevant. Professional development should connect instructional principles to practical adaptation, including the use of tactile and concrete learning materials, accessible communication strategies, environmental organisation, and assistive technology where appropriate. Institutional support is also essential, including mechanisms for sharing specialised materials, consulting experts, and engaging families in supporting learners' communication and participation.

Limitations

This study involved 32 teachers in two purposively selected schools, and its findings are not nationally representative. Resource availability was measured through teacher self-reports rather than independent inventories, and the cross-sectional design cannot establish causal effects. Learner achievement was not directly measured, and qualitative claims must be supported by verifiable transcripts and observation records. These limitations require careful interpretation but do not diminish the descriptive value of the reported resource concerns.

Conclusion

In conclusion, the study underscores that instructional adaptation for learners with deafblindness must be understood within the material and institutional contexts in which teachers work. Resource planning should consider not only whether materials exist, but also whether they are appropriate, functional, accessible, and usable by teachers and learners. Further research should combine teacher reports with structured resource audits and documented classroom observations to examine how resource conditions influence instructional practice.

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